USDA NRCS
Natural Resources Conservation Service

Water Well Protection on the Farm

Alabama Guide Sheet No. AL 642

Definition

A water well is constructed as an opening into an aquifer to provide general water needs for a farming or ranching operation. Proper water well protection involves the protection of wells already installed and the prevention of problems in wells that are being planned.

General Well Protection

All on-farm wells should be properly sited and protected to ensure there is no water contamination of either the well or the aquifer.

Wells should be located a safe distance from any potential source of contamination, hazardous products should not be stored near a well, and high-risk activities should be kept a safe distance from any well.

Any type of manure storage or animal confinement facility should be located a proper distance from any well. Also, the land application of manure and fertilizers should be kept a safe distance from wells. An NRCS technician can help identify state-required setbacks or recommended setbacks.

Surface runoff and drainage water can enter the top of a well, causing significant contamination; therefore, runoff should always be diverted away from all wells.

Install a well cap or sanitary seal to prevent unauthorized use and entry of contaminated water or live critters into the well.

Avoid mixing or using pesticides, fertilizers, fuels, and other potential chemical pollutants near the well.

Check valves can be used to prevent the back flow of contaminated water or hazardous products directly into a well.

Never dispose of wastes or other potential pollutants in a dry or abandoned well.

Planning New Wells

When a new well is properly sited, constructed, and initially decontaminated; and when the potential sources of pollution near the well are eliminated; the quality of water delivered to the user should remain free from contamination.

New wells should be located the proper distance from manure storage areas, animal confinement facilities, and manure application sites. In addition, wells should always be located at least 100 ft from and upslope of any septic tank or its leach field.

If practicable, wells should be located on higher ground and upgradient from potential sources of contamination or flooding. New wells should be located a safe distance from both overhead and underground utility lines.

A detailed geologic investigation should be performed for wells planned in a limestone aquifer which contain underground channels.

New Well Construction

Always hire a certified well driller for any new well construction or modification.

A well casing shall be installed in new wells to seal out undesirable surface or shallow groundwater and to support the side of the borehole from collapse of unstable earth materials. The casing shall extend from at least 1 ft above the ground surface to at least 2 ft into stable material or to the top of the screen.

If the well is intended for human consumption, the casing shall be surrounded at the ground surface by a 4-inch thick concrete slab extending at least 2 ft in all directions from the well.

Operation And Maintenance

Some wells may require special provisions by the well driller so the aquifer will provide the flow desired. The well construction records should be kept on file by the landowner. The well owner should periodically inspect exposed parts of the well for problems such as:

- Damaged well casing,
- Broken or missing well cap, and
- Settling and cracking of surface seals.

Disinfect drinking water wells at least once per year. Have the well tested once a year for coliform bacteria, nitrates, and other constituents of concern. (Contact the County Environmentalist with the Department of Public Health for guidance on disinfecting a well and well water testing.)

References

NRCS AL Conservation Practice Standard
Code 642 – Water Well